BACKGROUND OF THE INVENTION

This invention relates to improving the fuel consumption on engines and boilers in use by domestic commercial and industrial applications. When you improve the combustion of fuel, the result is less harmful emissions from the exhaust.

Our society is more dependent on hydrocarbon fuels used in transportation, heating and power generation than ever before. The present population uses even more vehicles and combustion burning appliances, thus increasing air pollution.

Also, many vehicles manufacturers have ignored the fuel efficiency of the engines to promote more power, speed and conveniences in their designs.

Because of these factors, this invention design is adapted to be installed on existing systems to improve combustion and reduce pollution.

SUMMARY OF THE INVENTION

This invention provides a means to use the existing electrical system to increase the combustion efficiency of the engine. The device uses the direct current voltage of the vehicles system to create a magnetic circuit in the pipe chamber as the fuel flows through the vessel.

The flowing fuel is directed at approximately right angles to the magnetic field by the helical coil within the pipe.

The result is that an electrical charge is created in the fuel particles before it enters the combustion chamber. When the fuel is flashed into fine particles in the combustion chamber, the like charged fuel particles separate. This separation allows more combustion air to diffuse with the charged particles for more complete combustion and therefore saving fuel and having a cleaner exhaust.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated but not limited by the attached drawings.

Fig. 1 is an external view of this invention.

Fig. 2 is an internal view of **Fig. 1** with the outer housing sectioned to show the internal elements of the device.

Fig. 3 is a view of electrode 13 with insulated copper coil wound on its outside diameter.

DETAILED DESCRIPTION OF THE INVENTION

This invention is for the treatment of hydrocarbon or fossil fuels to improve the combustion of the fuel which is used in a combustion chamber [not illustrated].

In **Fig. 1**, component **4** is a hollow metal tube with **5** indicating the wall. The surface is shown by **6** and the longitudinal axis is **7**. The inlet end connection of the device **8** receives the fuel to be treated. At the opposite end, the outlet connection of the device **9** is provided for dispensing fuel to a combustion chamber.

Fig. 3 shows a graphite rod electrode **13** wound with a fine insulated copper wire **14A** spaced one diameter apart. The ends of the inner coil **14A** and electrode are connected together on each end.

This electrode assembly **Fig. 3** is again wound with a larger insulated copper wire **14** forming a helical coil. The coils **14** are spaced one diameter apart.

The completed assembly **Fig. 3** and **14** is placed within the pipe **5**. This outer coil **14** and electrode assembly **Fig. 3** forms a passageway between the electrode assembly **Fig. 3** and the inner pipe wall **5A** to allow for free flowing fuel **15**.

Fig. 2 shows coil **10** located outside pipe **4**. When coil **10** is energized with a direct current voltage supply connected to leads **12**, a magnetic circuit is created. The magnetic flux of the magnetic circuit flows along the iron pipe surface **5** through the centerline of the pipe **7**, electrode **13** and coils **14** and **14A**.

The space between the helical coil **14** and pipe wall **5A** guides the fuel **15** at approximately right angles to the lines of magnetic flux and across coil winding **14A**. This fuel **15** [movement] generates an electromotive force or electrical charge within the electrode assembly **13**. The current generated flows from the electrode assembly **13** to the negative iron pipe wall **5A**. This results in the charging of the fuel particles **15** as it flows through the helical coil passageway. This electrical charged fuel **15** flows from the outlet **9** through the fuel line to injectors or nozzles to dispense it to the combustion chamber [not shown].